

PROJECT: 45719

REFERENCE: B-5763

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY RANDOLPH
PROJECT DESCRIPTION BRIDGE NO.129 ON SR 2407
(STARMOUNT ROAD) OVER BRANCH OF SANDY
CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5763	1	8

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES. REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

C.R. PASTRANA

Trigon Exploration

INVESTIGATED BY ESP Associates, P.A.

DRAWN BY T.T. WALKER

CHECKED BY P. WEAVER

SUBMITTED BY ESP Associates, P.A.

DATE September 2016



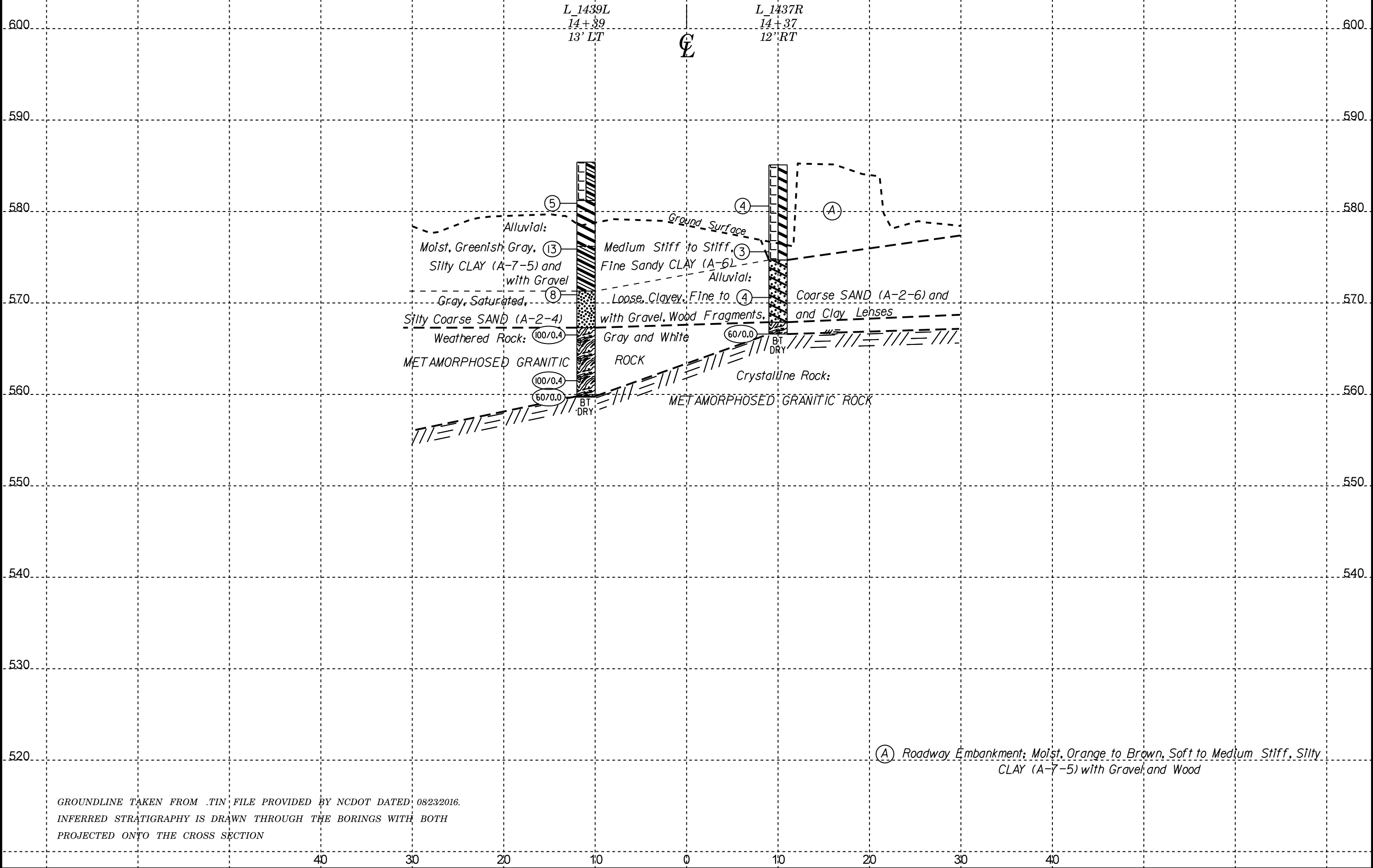
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Paul Weaver
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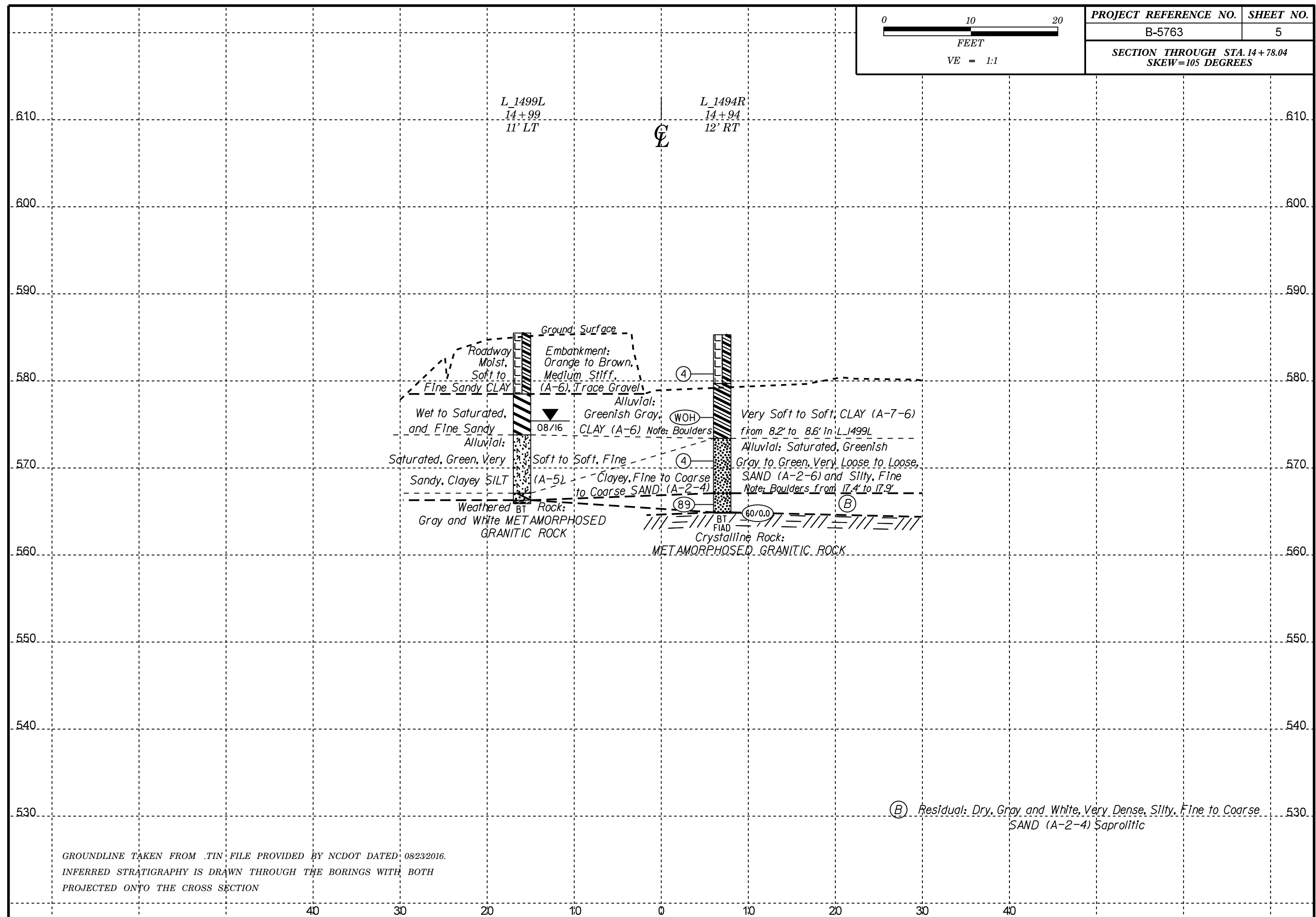
9/14/2016
DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

***NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS***

[illegible]





GEOTECHNICAL BORING REPORT
 BORE LOG

WBS 45719			TIP B-5763			COUNTY RANDOLPH			GEOLOGIST Pastrana, C.R.						
SITE DESCRIPTION Bridge No. 129 on SR 2407 (Starmount Road) over Branch of Sandy Creek									GROUND WTR (ft)						
BORING NO. L_1439L			STATION 14+39			OFFSET 13 ft LT			ALIGNMENT -L-			0 HR. 11.8			
COLLAR ELEV. 585.4 ft			TOTAL DEPTH 25.7 ft			NORTHING 770,341			EASTING 1,817,423			24 HR. Dry			
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 85% 02/22/2016						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER Toothman, R.			START DATE 08/23/16			COMP. DATE 08/24/16			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
590															
585														585.4	GROUND SURFACE 0.0
580	581.9	3.5	4	3	2	5						M		581.2	ROADWAY EMBANKMENT Orange to Brown, Medium Stiff, Coarse to Fine Sandy CLAY (A-6), Little Gravel 4.2
575	576.9	8.5	8	6	7	13						W		576.2	ALLUVIAL Greenish Gray, Medium Stiff, Silty CLAY (A-7-5) 9.2
570	571.9	13.5	4	6	2	8						Sat.		571.3	Greenish Gray, Stiff, Fine Sandy CLAY (A-6), Little Gravel Note: Blow Counts Influenced by Gravel 14.1
565	566.9	18.5	100/0.4							100/0.4				567.3	Gray, Loose, Silty, Coarse SAND (A-2-4), Trace Rock Fragments and Clay Lenses Note: Blow Counts Influenced by Gravel 18.1
560	561.9	23.5	100/0.4							100/0.4				559.8	WEATHERED ROCK Gray and White METAMORPHOSED GRANITIC ROCK
	559.7	25.7	60/0.0							60/0.0				559.7	CRYSTALLINE ROCK Gray and White METAMORPHOSED GRANITIC ROCK Boring Terminated with Standard Penetration Test Refusal at Elevation 559.7 ft In Crystalline Rock: METAMORPHOSED GRANITIC ROCK Borehole Cave In at 4.8' 25.6 25.7

WBS 45719			TIP B-5763			COUNTY RANDOLPH			GEOLOGIST Pastrana, C.R.				
SITE DESCRIPTION Bridge No. 129 on SR 2407 (Starmount Road) over Branch of Sandy Creek									GROUND WTR (ft)				
BORING NO. L_1437R			STATION 14+37			OFFSET 12 ft RT			ALIGNMENT -L-			0 HR. Dry	
COLLAR ELEV. 585.1 ft			TOTAL DEPTH 18.5 ft			NORTHING 770,322			EASTING 1,817,406			24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 85% 02/22/2016						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER Toothman, R.			START DATE 08/23/16			COMP. DATE 08/23/16			SURFACE WATER DEPTH N/A				
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	<div><div>MOI</div><div>LOG</div></div>	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			
590													
585													585.1 GROUND SURFACE 0.0
580	581.6	3.5	3	2	2	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><di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GEOTECHNICAL BORING REPORT
BORE LOG

WBS 45719			TIP B-5763			COUNTY RANDOLPH			GEOLOGIST Pastrana, C.R.					
SITE DESCRIPTION Bridge No. 129 on SR 2407 (Starmount Road) over Branch of Sandy Creek											GROUND WTR (ft)			
BORING NO. L_1499L			STATION 14+99			OFFSET 11 ft LT			ALIGNMENT -L-			0 HR. 11.8		
COLLAR ELEV. 585.5 ft			TOTAL DEPTH 19.6 ft			NORTHING 770,303			EASTING 1,817,469			24 HR. 10.1		
DRILL RIG/HAMMER EFF./DATE SIMCO-2400 SK-1						DRILL METHOD H.S. Augers			HAMMER TYPE N/A					
DRILLER Toothman, R.			START DATE 08/23/16			COMP. DATE 08/23/16			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
590														
585													585.5 GROUND SURFACE	0.0
580													ROADWAY EMBANKMENT Moist, Orange to Brown, Soft to Medium Stiff, Fine Sandy CLAY (A-6), Trace Gravel	
575													578.5 ALLUVIAL Wet, Greenish Gray, Very Soft to Soft, CLAY (A-7-6)	7.0
570													573.8 Boulders from 8.2' to 8.6' Saturated, Green, Very Soft to Soft, Fine Sandy, Clayey SILT (A-5)	11.7
													567.1 Saturated, Green, Very Loose to Loose, Clayey, Fine to Coarse SAND (A-2-6)	18.4
													566.3 WEATHERED ROCK Gray and White METAMORPHOSED GRANITIC ROCK	19.2
													565.9 Boring Terminated at Elevation 565.9 ft In Weathered Rock: METAMORPHOSED GRANITIC ROCK	19.6
Note: Boring was drilled under powerlines, SPT's could not be performed														
Note: Stratigraphy was inferred by cuttings														
Note: Drill rig refused in WR														

WBS 45719			TIP B-5763			COUNTY RANDOLPH			GEOLOGIST Pastrana, C.R.				
SITE DESCRIPTION Bridge No. 129 on SR 2407 (Starmount Road) over Branch of Sandy Creek									GROUND WTR (ft)				
BORING NO. L_1494R			STATION 14+94			OFFSET 12 ft RT			ALIGNMENT -L-				
COLLAR ELEV. 585.3 ft			TOTAL DEPTH 20.5 ft			NORTHING 770,288			EASTING 1,817,451				
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 85% 02/22/2016						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic				
DRILLER Toothman, R.			START DATE 08/24/16			COMP. DATE 08/24/16			SURFACE WATER DEPTH N/A				
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100	MOI		
590													
585													585.3 GROUND SURFACE 0.0
580	581.8	3.5	2	2	2							M	ROADWAY EMBANKMENT Orange to Brown, Soft to Medium Stiff, Fine Sandy CLAY (A-6), Little Gravel No Sample Recovered
575	576.8	8.5	WOH	WOH	WOH							W	579.7 ALLUVIAL 5.6 Greenish Gray, Very Soft, Fine Sandy CLAY (A-6)
570	571.8	13.5	1	2	2							Sat.	573.4 11.9 Greenish Gray, Loose, Silty, Fine to Coarse SAND (A-2-4)
565	566.8	18.5	30	50	39							D	567.1 18.2 Boulders from 17.4' to 17.9'
	564.8	20.5	60/0.0										564.9 20.4 564.8 20.5 Gray and White, Very Dense, Silty, Fine to Coarse SAND (A-2-4), Saprolitic CRYSTALLINE ROCK Gray and White METAMORPHOSED GRANITIC ROCK Boring Terminated with Standard Penetration Test Refusal at Elevation 564.8 ft In Crystalline Rock: METAMORPHOSED GRANITIC ROCK

NCDOT BORE DOUBLE B5763_GEO_BRDG0129_GINT_LOGS.GPJ NC_DOT.GDT 9/13/16

SITE PHOTOGRAPHS
State Project No. 45719 – TIP No. B-5763 – Bridge No. 129 on SR 2407 (Starmount Road) over Branch of Sandy Creek - Randolph County, NC

View of Existing Bridge No. 129 Looking Upstation



View of Existing Bridge No. 129 Looking Downstation



View Looking Upstream from Bridge No. 129



View Looking Downstream from Bridge No. 129

